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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,173	06/27/2003	John Pope	1530	7790

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EXAMINER	
REGO, DOMINIC E	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/609,173	POPE, JOHN	
	Examiner	Art Unit	
	Dominic E. Rego	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,9-13 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11-13* is/are allowed.

6)☒ Claim(s) *1,4,9,10 and 18* is/are rejected.

7)☒ Claim(s) *2 and 3* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,9, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Barnes *(US Patent Application Publication #2004/0047309)*.

Regarding claim 1, Barnes teaches in a wireless network *(figure 1)*, a method for transmitting analog signals to at least one wireless terminal *(Figure 1, base stations 100 transmitting analog signals to at least one wireless terminals 102,104,106)*, the method comprising:

receiving a digital signal that defines (i) bearer data for each of a plurality of channels; and (ii) control information for each of the plurality of channels (Paragraph 0023);

parsing from the control information, a power level and a modulation frequency, the power level being one of a plurality of possible power levels and the modulation frequency being one of a plurality of possible modulation frequencies (Paragraph 0023);

based on the power level and the modulation frequency, responsively generating an analog signal having a plurality of analog channels that defines the bearer data in the digital signal; and transmitting the analog signal to the at least one wireless terminal *(Paragraph 0023: Barnes teaches in accordance with the GSM protocol, the digital data is formatted into bursts of 148 bits. The bits are rearranged so as to spread temporally adjacent bits over a larger time frame and then reassembled at the receiving station so as to reduce the effect of lost data. The digital data is processed in the baseband processor 306. The baseband processor 306 sets the transmitted signal level, i.e. the power level, suitable for each carrier and time slot used. After baseband processing, the digital data is modulated onto a radio frequency (RF) carrier and forwarded for wireless transmission to the user terminals).*

Regarding claim 9, Barnes teaches in a wireless network, a system for transmitting analog signals to at least one wireless terminal, the system comprising:

a receiver arranged to receive a digital signal that defines (i) bearer data for each of a plurality of channels; and (ii) control information for each of the plurality of channels (Paragraph 0023);

a parser arranged to parse from the control information, a power level and a modulation frequency, the power level being one of a plurality of possible power levels and the modulation frequency being one of a plurality of possible modulation frequencies (Paragraph 0023);

means for responsively generating, based on the power level and the modulation frequency, an analog signal having a plurality of analog channels that defines the bearer data in the digital signal; and an RF power amplifier arranged to transmit the analog signal to the at least one wireless terminal *(Paragraph 0023: Barnes teaches in accordance with the GSM protocol, the digital data is formatted into bursts of 148 bits. The bits are rearranged so as to spread temporally adjacent bits over a larger time frame and then reassembled at the receiving station so as to reduce the effect of lost data. The digital data is processed in the baseband processor 306. The baseband processor 306 sets the transmitted signal level, i.e. the power level, suitable for each carrier and time slot used. After baseband processing, the digital data is modulated onto a radio frequency (RF) carrier and forwarded for wireless transmission to the user terminals).*

Regarding claim 18, Barnes teaches a system comprising:

a digital base station *(Figure 1, elements 100);*

a radio link converter unit *(Figure 3, element 308);*

wherein the digital base station is communicatively coupled to the radio link converter unit *(paragraph 0023: Barnes teaches the base station part 100 comprises a transmission unit, TRU 304, a baseband processor 306, an up-converter 308, an amplifier 310, a controller 312 and a register 314)*;

the digital base station arranged to:

receive bearer data for a plurality of channels;

establish (i) a modulation frequency for an analog signal that is to define the bearer data for the plurality of channels; and (ii) a power level for each channel of bearer data, a digital signal defining (i) the bearer data, (ii) the modulation frequency, and (iii) the power level (Paragraph 0023); and

the radio link converter unit arranged to:

receive a digital signal that defines (i) bearer data for each of a plurality of channels; and (ii) control information for each of the plurality of channels; parse from the control information, a power level and a modulation frequency, the power level being one of a plurality of possible power levels and the modulation frequency being one of a plurality of possible modulation frequencies; based on the power level and the modulation frequency, responsively generate an analog signal having a plurality of analog channels that defines the bearer data in the digital signal; and transmit the analog signal to the at least one wireless terminal *(Paragraph 0023: Barnes teaches in accordance with the GSM protocol, the digital data is formatted into bursts of 148 bits. The bits are rearranged so as to spread temporally adjacent bits over a larger time frame and then reassembled at the receiving station so as to reduce the effect of lost data. The digital data is processed in the baseband processor 306. The baseband processor 306 sets the transmitted signal level, i.e. the power level, suitable for each carrier and time slot used. After baseband processing, the digital data is modulated onto a radio frequency (RF) carrier and forwarded for wireless transmission to the user terminals).*

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes *(US Patent Application Publication #2004/0047309)* in view of Dajer et al. (US Patent #6,781,980).

Regarding claims 4 and 10, Barnes teaches all the claimed elements in claim 1, except for the method, wherein the control information further comprises a spreading sequence and a PN offset.

However, in related art, Dajer teaches the method, wherein the control information further comprises a spreading sequence *(such as Walsh code)* and a PN offset *(Col 3, line 5-13 and col 2, line 42-51).*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of the method, wherein the control information further comprises a spreading sequence and a PN offset, as taught by Kenneth, in the Dajer's device in order to prevent identification of the sequence (Dajer, col 3, line 9).

Allowable Subject Matter

5. Claims 11-13 are allowed.

Regarding claim 11, the prior art of record, specifically Barnes *(US Patent Application Publication #2004/0047309)* teaches in a wireless network, a system for transmitting analog signals to at least one wireless terminal, the system comprising:

a receiver arranged to receive a digital signal that defines (i) bearer data for each of a plurality of channels; and (ii) control information for each of the plurality of channels (Paragraph 0023);

a parser arranged to extract from the control information, a power level and a modulation frequency, the power level being one of a plurality of possible power levels and the modulation frequency being one of a plurality of possible modulation frequencies *(Paragraph 0023: Barnes teaches in accordance with the GSM protocol, the digital data is formatted into bursts of 148 bits. The bits are rearranged so as to spread temporally adjacent bits over a larger time frame and then reassembled at the receiving station so as to reduce the effect of lost data. The digital data is processed in the baseband processor 306. The baseband processor 306 sets the transmitted signal level, i.e. the power level, suitable for each carrier and time slot used. After baseband processing, the digital data is modulated onto a radio frequency (RF) carrier and forwarded for wireless transmission to the user terminals).*

However, none of the prior art cited alone or in combination provides the motivation to teach a spreading unit arranged to define, for each of the plurality of channels, a spread spectrum signal;

a power control unit arranged to amplify the spread spectrum signal for each of the plurality of channels, the spread spectrum signal being amplified to the power level defined by the control information for the channel;

an adder arranged to sum the spread spectrum signal for each channel to produce a sum of spread spectrum signals;

a digital-to-analog converter arranged to convert the sum of the spread spectrum signals into an analog signal;

a modulator arranged to modulate the analog signal to the modulation frequency defined by the control information; and

an RF power amplifier arranged to transmit the analog signal to the at least one wireless terminal.

Dependent claims 12 and 13 are allowed for the same reasons.

6. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, the prior art of record fails to teach the method, wherein responsively generating the analog signal comprises:

applying a spreading sequence to each channel of bearer data in the digital signal to produce a spread spectrum signal for each channel of bearer data;

amplifying the spread spectrum signal for each channel of bearer data to the power level defined by the control information for the channel;

adding the spread spectrum signal for each channel of bearer data to produce a sum of spread spectrum signals;

converting the sum of the spread spectrum signals into the analog signal; and

modulating the analog signal to the modulation frequency defined by the control information.

Response to Arguments

7. Applicant's arguments filed 04/16/2007 have been fully considered but they are not persuasive. Regarding claims 1,9, and 18, applicant argues that Barnes does not teach (i) receiving a digital signal that defines bearer data for each of a plurality of channels, and control information for each of the plurality of channels, (ii) parsing from the control information, a power level and a modulation frequency, the power level being one of a plurality of possible power levels and the modulation frequency being one of a plurality of possible modulation frequencies, and (iii) based on the power level and the modulation frequency, responsively generating an analog signal having a plurality of analog channels that defines the bearer data in the digital signal. The examiner disagrees. Paragraphs 0020, 0022-0023 and figure 3, Barnes teaches (i) the base station part 100 comprises a transmission unit, TRU 304, receives digital data from base station controller, BSC 114 same as receiving a digital signal that defines bearer data for each of a plurality of channels. (ii) The baseband processor 306 sets the transmitted signal level, i.e. the power level, suitable for each carrier and slot used. After baseband processing, the digital data is modulated onto a radio frequency (RF) carrier which is same as parsing from the control information, a power level and a modulation

frequency, the power level being one of a plurality of possible power levels and the modulation frequency being one of a plurality of possible modulation frequencies. (iii) Power level and modulated frequency or modulated Radio Frequency is forwarded for wireless transmission to the user terminal as an analog form. Transmitting signals from the base station to mobile station or mobile station to base station are always in analog form. Before transmitting analog signals to wireless device, D/A device transforms digital signal to analog signals.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic E. Rego whose telephone number is 571-272-8132. The examiner can normally be reached on Monday-Friday, 8:30 am-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dominic E. Rego

PHILIP J. SOBUTKA
PATENT EXAMINER

6/15/12